

### REMARKS

Reconsideration of the present patent application is respectfully requested. Claims 1-22 are pending in this application. By this Amendment, Claims 1, 10, 11, 15, 16, 18 and 21 have been amended.

#### I. Rejection of Claims 1, 10, 15 and 16 under §102 -- Thomas

Independent claims 1 and 10 were rejected under 35 USC §102(b) as being anticipated by Thomas (United States Patent No. 6,391,098). The Office Action states that:

“Thomas is considered to disclose the claimed assembly and method comprising: an air dryer 24 including a manifold and a desiccant cartridge 34, a bore A1 or A2 running through said manifold; and a fastener, which includes a spin-on desiccant cartridge, disposed in said bore, wherein air flow passing through the air dryer intersects the bore and communicates to a purge volume, wherein the said fastener or mounting fastener either connects said air dryer manifold to the purge volume or is secured to a reservoir 50 including a fastening means thereof.”

For the following reasons, Applicants respectfully disagree. Claims 1 and 10 are directed to an air dryer with an air flow path that is directed through a fastener bore. Specifically, Claim 1, as amended, recites, in pertinent part,

“an air dryer including a manifold and a desiccant cartridge, *wherein said manifold includes a threaded portion for connecting to said desiccant cartridge;* a bore running through said manifold; and  
a *fastener disposed in said bore*, wherein air flow passing through the air dryer intersects the bore and communicates to a purge volume, *wherein said fastener connects said air dryer manifold to the purge volume.*” (emphasis added).

Claim 10, as amended, recites, in pertinent part,:

“a manifold, wherein said manifold includes *a bore for insertion of a mounting fastener and a threaded portion;* and  
a *spin-on desiccant cartridge, which connects to said threaded portion of said manifold;* and

wherein said manifold bore communicates air between the air dryer and a purge volume *and wherein said mounting fastener connects said air dryer manifold to the purge volume.*” (emphasis added).

Claims 15 and 16 are method claims that are directed to methods of drying air including the step of passing air through a fastening bore. Specifically, Claim 15, as amended, recites, in pertinent part,:

“delivering a flow of air to an air dryer manifold with *a desiccant bed canister attached to a threaded portion of said manifold*;  
passing said flow of said air through the desiccant bed, thereby drying the air;  
delivering the dried air to a set of downstream components;  
purging the desiccant bed with a purge flow from a purge volume to regenerate the desiccant bed; and  
exhausting said purge flow after it has passed through said desiccant bed;  
wherein said purge flow passes from said purge volume via *a bore in said manifold in which a fastener securing said air dryer to the vehicle is disposed.*” (emphasis added).

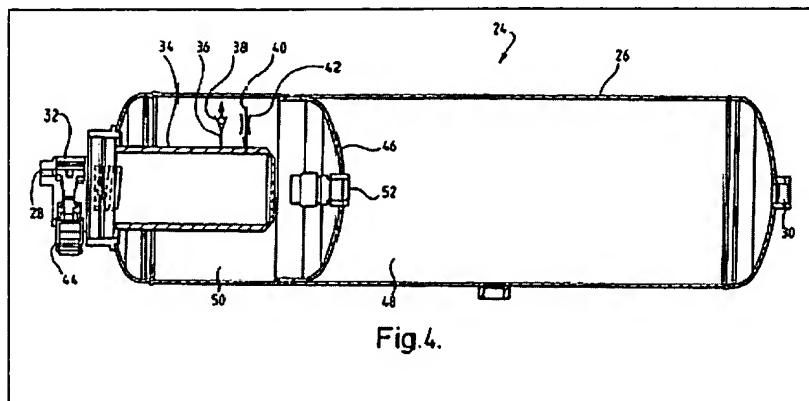
Claim 16, as amended, recites, in pertinent part,:

“an air dryer including a manifold and *desiccant cartridge connected to a threaded portion of said manifold*; and  
a means for securing said air dryer to an air reservoir, wherein said air reservoir includes a purge volume;  
wherein means for securing said air dryer includes a means for communicating air between said air dryer and said purge volume and *a fastening means disposed within said means for communicating air* between said air dryer and said purge volume, *said fastening means securing said air dryer to said air reservoir.*” (emphasis added)

Each of these claims, namely claims 1, 10, 15 and 16, include an element of a fastener that is disposed within a bore or communication means that provides an air passageway between the air dryer and the purge volume, wherein the fastener secures the air dryer to the purge volume or reservoir. *In other words, the fastener acts to not only secure the air dryer to the reservoir, but also as a path for an air stream that communicates between the air dryer and reservoir.* Each of independent claims 1, 10, 15 and 16 have been amended to recite that the desiccant cartridge is connected to a threaded portion of the

manifold, thereby clarifying that the fastener is not the connection between the desiccant cartridge and the manifold.

Thomas does not disclose the invention as claimed in independent claims 1, 10, 15 and 16. Thomas discloses an integral air dryer-reservoir, wherein the desiccant cartridge is disposed within the reservoir. Figure 4 of Thomas is reproduced below.



**Figure 4 of United States Patent No. 6,391,098 - Thomas**

In Thomas, the desiccant compartment (34) is threadably secured to control valve (32); *however* Thomas does not include a fastener disposed within a bore in a manifold that provides communication of an air stream between the reservoir and the air dryer. Thomas does not teach or disclose each element of the claimed invention. As such, independent claims 1, 10, 15 and 16 are not anticipated by Thomas and reconsideration of this rejection is respectfully requested.

## **II. Rejection of Claim 11 under §102 -- Thomas**

Independent claim 11 was rejected under 35 USC §102(b) as being anticipated by Thomas (United States Patent No. 6,391,098).

Claim 11, as amended, recites, in pertinent part,:

“a manifold;  
a desiccant cartridge mounted on a threaded portion of said manifold; and  
a fastener disposed within a bore running through said manifold;  
wherein said fastener is secured to an outer surface of an enclosed reservoir.”  
(emphasis added).

As such, independent claim 11, as amended, recites a manifold with a desiccant cartridge mounted on a threaded portion of the manifold *and* a fastener disposed within a bore running through the manifold that is secured to an outer surface of an enclosed reservoir. Thomas does not disclose these elements. Thomas does disclose a desiccant cartridge mounted on a threaded portion of a manifold; *however*, Thomas does not disclose a fastener disposed within a bore in a manifold that is secured to an outer surface of an enclosed reservoir. Thomas has connection points between the control valve (32) and the reservoir (26), but the control valve certainly does not include a fastener disposed within a bore in a manifold that is secured to an outer surface of an enclosed reservoir. Since Thomas does not teach each element of the claimed invention, Thomas does not anticipate independent claim 11, as amended. As such, reconsideration of this rejection is respectfully requested.

### **III. Rejection of Claims 18 under §102 – Thomas**

Independent claim 18 was rejected under 35 USC §102(b) as being anticipated by Thomas (United States Patent No. 6,391,098). The basis the Office action set forth for this rejection is the same as set forth above.

Claim 18, as amended, recites, in pertinent part,:

“an air dryer;  
a single means for *securing said air dryer to an outer surface of an enclosed purge reservoir*;  
and  
a means for *preventing rotation of the air dryer* when said air dryer is secured to the purge reservoir.”

The Office Action states that Thomas discloses screw threaded pressure bearings for inlet and outlet modular pressure fittings and that such disclosure implies rotation prevention means. Applicants are unclear how pressure fittings on the inlet and outlet imply anti-rotation means. However, Applicants have amended claim 11, to clarify that the air dryer is mounted to an outer surface of an enclosed purge reservoir and that the rotation prevention means acts to prevent rotation of the air dryer in relation to the purge reservoir to which the air dryer is mounted. Thomas does not disclose an air dryer mounted to a surface of an enclosed purge reservoir or a means for preventing rotation of the air dryer relative to the reservoir. The Office Action even states that Thomas does not disclose the claimed interlock or anti-rotation mechanism. As such, claim 18, as amended, is not anticipated by Thomas. Reconsideration of this rejection is respectfully requested.

### **IV. Rejection of Claims 14 and 17 under §103 -- Thomas & Shamane**

Independent claim 17 was rejected under 35 USC §103(a) as being unpatentable over Thomas in view of Shamine et al. (United States Patent No. 5,622,544). The Office Action states that Thomas is considered to disclose the claimed invention, except for the claimed interlock or anti-rotation mechanism. The Office Action states that Shamine is considered to disclose the claimed interlock or anti-rotation mechanism at column 5, lines 7-21, wherein the disclosed interlock function implies the claimed anti-rotation mechanism to prevent aid dryer rotation. Although the Office Action clearly states that Thomas does not disclose the claimed interlock or anti-rotation mechanism, the Office Action states that Shamine was not cited for the intended use of the claimed interlock or anti-rotation mechanism, because it is considered that the claimed means for preventing rotation is considered disclosed in Thomas. This cannot be the case if Thomas does not disclose anti-rotation means as stated by the Office Action.

The Office Action concludes that it would have been obvious for one skilled in the art to combine the teachings of primary reference Thomas with the teachings in secondary reference Shamine for the claimed interlock or anti-rotation mechanism for the purpose of providing a secure fastener connection of an air dryer connection to its supporting housing. For the following reasons, Applicants respectfully disagree.

Independent claim 17 recites, in pertinent part,:

“an *air dryer including a manifold and desiccant cartridge*;  
a single fastener for securing said manifold to a vehicle; and  
an anti-rotation mechanism that *prevents rotation of the air dryer* when said air dryer is secured to the vehicle.” (emphasis added).

Independent claim 14 recites, in pertinent part,:

“aligning an air dryer with a reservoir such that one or more stabilizing mechanisms interlock to *prevent rotation of the air dryer relative to the reservoir*;  
inserting a fastener through the manifold and into a threaded member in the reservoir;  
and  
tightening said fastener to said reservoir.” (emphasis added).

Claims 14 and 17 recite that the anti-rotation mechanism prevents the rotation of the air dryer, which includes a manifold and desiccant cartridge. Shamine teaches “cartridge 12 is prevented from rotating by interlocking between tabs 86 and features on body casting 68.” As such Shamine teaches anti-rotation of the desiccant cartridge *relative to the manifold or housing*. The combination of Thomas and

Shamine, even if such combination is accurate, does not arrive at the claimed invention of claims 14 and 17. *The Office Action states that Thomas does not teach anti-rotation means and Shamine clearly does not show anti-rotation means between the air dryer and reservoir.* As such, claims 14 and 17 are not rendered unpatentable in view of Thomas and Shamine.

#### **V. Rejection of Claim 21 under §103 -- Thomas**

Independent claim 21 was rejected under 35 USC §103(a) in view of Thomas. The Office Action states that Thomas is considered to disclose the claimed invention, except for the claimed bracket to rail height ratio. The Office Action states that it would have been obvious matter of design choice for one skilled in the art to claim the mounting bracket to rail height ratio, since it has not been specified that the claimed mounting bracket to rail height ratio provides any advantages over the mounting bracket to rail height ratio shown and implicitly discussed in the primary reference Thomas. The Office Action further states that the claimed bracket to rail height ratio is silent with respect to trucks and thus concludes that the ratio is merely a design choice. For the following reasons Applicants disagree.

Independent claim 21, as amended, recites, in pertinent part,:

“an air dryer including a manifold and desiccant cartridge; and  
a reservoir, wherein said air dryer is coupled to said reservoir, wherein said reservoir includes *a mounting bracket that is coupled to a rail of a commercial vehicle*, said rail of a vehicle having a height;  
wherein said *mounting bracket includes a height that is less than 75 percent of said rail height.*” (emphasis added).

Applicants have already stated that a constant problem commercial vehicles face is that there is only so much truck rail space for mounting items, such as air dryers. Applicants have also amended claim 21 to specify a commercial vehicle rail as the location of the mounting of the reservoir. Thomas does not teach, disclose, or suggest anything to about mounting the reservoir to the commercial vehicle rail, let alone reducing the height of the mounting bracket to less than the height of the truck rail. The only disclosure in Thomas is directed to making the air dryer compact in nature. Thomas is not even referring to any sort of mounting of the air dryer, but instead is referring to the space savings created by mounting the desiccant cartridge inside of the reservoir. Thomas simply does not disclose or teach any aspect of mounting the reservoir to a vehicle. Since Thomas does not teach or suggest a mounting bracket that includes a height less than 75 percent of the rail height, Thomas does not render claim 21 unpatentable.

#### **VI. Dependent Claims:**

Applicant submits that the dependent claims are patentable because they *at least* incorporate the same limitations as their respective independent claims.

Furthermore, claim 19, as amended, is also patentable over the cited art because it recites that the air dryer includes a manifold and desiccant cartridge locate outside of said enclosed purge reservoir. Thomas discloses a desiccant cartridge located inside a reservoir. For this additional reason, claim 19, as amended, is patentable over the prior art.

#### **VII. Conclusion:**

Based on the foregoing remarks and amendments, Applicant believes that all of the claims in this case are now in condition for allowance and an indication to that effect is respectfully requested. Furthermore, if the Examiner believes that additional discussions or information might advance the prosecution of this case, the Examiner should feel free to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

Date: 2/15/05

By: 

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